

EXHIBIT 11



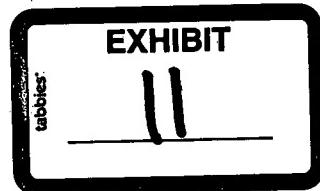
UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

In Re: Methyl Tertiary Butyl Ether ("MTBE")
Products Liability Litigation

MDL No. 1358
Master File C.A. No.
1:00-1898 (SAS)

This document relates to the following case:
Orange County Water District v. Unocal, et al.,
04 Civ. 4968

SUPPLEMENTAL DECLARATION OF ROY HERNDON IN
OPPOSITION TO STATUTE OF LIMITATIONS MOTION



1. I am the Chief Hydrogeologist at Orange County Water District ("OCWD") with responsibility for managing the Hydrogeology Department. My responsibilities as head of the Hydrogeology Department include overseeing the construction of a basin-wide numerical groundwater flow model, development of a comprehensive data management and geographic information system, and design/construction of multi-depth monitoring wells and municipal water wells. I also act as the District's liaison to state and local regulatory staff such as the Santa Ana Regional Water Quality Control Board and the Orange County Health Care Agency. A true and correct copy of my most recent curriculum vitae is attached.

2. I am a California licensed Professional Geologist and California Certified Hydrogeologist with over twenty years of experience in hydrogeologic investigations, including the delineation of groundwater contaminant plumes.

3. I submitted several prior declarations in this case in opposition to the defendants' motion for summary judgment on the statute of limitations. I have reviewed the Court's initial opinion on the statute of limitations. This declaration summarizes my prior declarations, and addresses issues that the Court asked OCWD to address.

4. The Court asked whether MTBE in groundwater caused OCWD to act prior to May 6, 2000. The answer to that question is no. OCWD took no specific action with respect to MTBE in groundwater at any specific locations prior to May 6, 2000, for reasons explained below.

5. The Orange County groundwater basin covers over 300 square miles.

After more than 15 years of detailed groundwater monitoring and analysis, OCWD hydrogeologists and engineers have found that the groundwater basin is composed of three major aquifers, all hydraulically connected. The District refers to these as the Shallow, Principal and Deep aquifers. An aquifer refers in this context to a vertical grouping of aquifers that tend to have similar groundwater elevation characteristics. Groundwater flowing from one aquifer to another may be slowed by intervening deposits of clays and silts.

6. The Shallow aquifer reaches a depth of approximately 200 feet, while the underlying Principal aquifer reaches depths of approximately 1,500 feet. The Deep aquifer underlies the Principal aquifer and reaches depths of 2,000 feet or greater. Each aquifer is composed of multiple interconnected layers of sands and gravels with intervening less-permeable (but "leaky") clays and silts.

7. Most of the approximately 200 drinking water production wells in the District currently draw groundwater from the Principal aquifer at typical depths of 300 to 1,000 feet. Water suppliers that operate drinking water wells within OCWD's service area draw preferentially from deeper aquifers because in general, the water in those aquifers tends to be higher quality than water in shallow aquifers. The Principal aquifer is replenished by recharge water that travels from ground surface through the Shallow aquifer, including through intervening "leaky" clay and silt layers, into the Principal aquifer. Only a few production wells are currently deep enough to draw

injects that water into the groundwater basin. The District's GWRS permit imposes numerous requirements on the District if recharge recycled water contains contaminants such as MTBE, including an obligation to provide an alternative safe drinking water supply or approved treatment system for any drinking water well impacted by the recharge recycled water. Specifically, the District "... will be responsible for ... providing an alternative source of domestic water supply, or a CDHS approved treatment mechanism ... [if a] domestic water well is unsuitable for human consumption as a direct result of the GWRS." (GWRS permit at sec. H, par. 10.)

40. I am familiar with the boundaries of the District and attest that the cities of San Bernardino, Riverside, La Habra and Brea are not within the boundaries of the District.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed this 28th day of March, 2008, at Fountain Valley, California.



Roy L. Herndon

EXHIBIT 12

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK



IN RE: METHYL TERTIARY BUTYL
ETHER ("MTBE") PRODUCTS
LIABILITY LITIGATION

: Master File No. 1:00-1898
MDL 1358 (SAS)
M 21-88

This document relates to:

*Orange County Water District v. Unocal
Corp., et al., 04 Civ. 4968*

:
SUPPLEMENTAL DECLARATION OF
ROY HERNDON IN OPPOSITION TO
DEFENDANTS' MOTION FOR
SUMMARY JUDGMENT ON THE
STATUTE OF LIMITATIONS
:



I, Roy Herndon, declare and state:

1. I am the Chief Hydrogeologist at the Orange County Water District (District). I have submitted several prior declarations in this case that set forth my qualifications. I have been employed by the District since 1988.

2. I have reviewed the supplemental declarations of William T. Costley III and Margaret Eggers, submitted with Defendants' Supplemental Brief in the above matter. I have also reviewed the pages cited by defendants from the 2000 USGS Stormflow Study.

3. Exhibit 1 to William Costley's supplemental declaration is a chart compiling data that shows MTBE detections in groundwater at various locations and in differing concentrations prior to May 6, 2000. This chart describes MTBE in shallow groundwater at service station sites, and such water simply is not useable drinking water. With limited exceptions, virtually all drinking water wells within the District's service area draw water from several hundred feet below ground surface, and certainly none draw water directly from shallow depths close to service stations. The chart attached to Mr. Costley's supplemental declaration does not reveal information necessary to determine whether the releases indicated on the chart have caused appreciable harm to the District. The chart does not disclose, for example, proximity to useable drinking water, the depths at which the detections occurred, the proximity of the detections to underground storage tanks, to wells, or to useable drinking water, the mass of the release, groundwater flow direction at the site, whether the plume (if any) created by the release has been delineated, whether remediation has been initiated or completed, or how much contamination (if any) has escaped remedial efforts. The chart reveals only that there has been a release at a site and that MTBE has been detected at above regulatory levels in groundwater at the site.

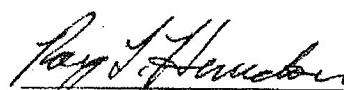
4. As I stated in my declaration in support of the District's Supplemental Brief on Statute

contamination has been removed, or that the recipient is forever absolved from responsibility for contamination. I am familiar with sites, for example, where the Regional Board or other public agency stopped overseeing remediation after monitoring well detections began to decline, despite the fact that the available evidence suggested that the reason for the decline was that the plume had moved off site, rather than that remedial efforts had removed the MTBE.

9. The 2000 USGS Stormflow Study cited in Defendants' Supplemental Brief addresses detections of MTBE in surface water, not groundwater. Although MTBE is remarkably persistent in groundwater, MTBE attenuates rapidly in surface water because it is volatile and exposed to the air. Detections of MTBE in surface water, therefore, do not by themselves suggest any appreciable harm to groundwater in the District. This is particularly true for the detections discussed in the 2000 USGS Stormflow Study, since that Study states: "Concentrations of MTBE are within the range expected for surface water in equilibrium with urban air." 2000 USGS Stormflow Study at 31. In other words, USGS concluded that, given the amounts of MTBE detected in stormflow returns, the MTBE probably came from airborne dispersion, rather than a stationary source.

I declare under penalty of perjury under the laws of the United States of America and the State of California that the foregoing is true and correct.

Executed this 28th day of February, 2007, at Fountain Valley, California.



Roy Herndon

EXHIBIT 13

Graham E. Fogg, Ph.D.

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IN THE UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

IN RE:

Methyl Tertiary Butyl: Master File No. 1:00-1898
Ether ("MTBE") : MDL NO. 1358 (SAS)
Products Liability :
Litigation :

This Document Relates to:
Crescenta Valley Water District
V. Mobil Corporation, et al.,
Case No. 07 civ. 9453 (SAS)

Saturday, January 22, 2011

Videotaped Deposition of GRAHAM E. FOGG,
Ph.D., Volume III, Expert Witness, held at the Law
Offices of Sheppard Mullin Richter & Hampton, 355
South Hope, Suite 4300, Los Angeles, California,
beginning at 9:02 a.m.

Reported by:
Sandra Bunch VanderPol, CSR #3032
Certified Realtime Reporter
Registered Merit Reporter
Realtime Systems Administrator credentialed
Fellow, Academy of Professional Reporters

GOLKOW TECHNOLOGIES, INC.
877.370.3377 ph | 917.591.5672 fax
deps@golkow.com



Golkow Technologies, Inc. - 1.877.370.DEPS

Graham E. Fogg, Ph.D.

<p style="text-align: center;">Page 490</p> <p>1 quality depend on the typically shallow sources of 2 contamination. And the shallow monitoring well data 3 around release sites are indicative of these various 4 sources of contamination to the groundwater system.</p> <p>5 Q. Are you aware of data that shows what 6 percentage of MTBE found in monitoring wells actually 7 reaches drinking water wells?</p> <p>8 A. There's no such data.</p> <p>9 Q. Do you know what percentage of the 10 population in California is served by private wells 11 only?</p> <p>12 A. I have numbers on that, but I have 13 not looked at them recently. And I believe they are 14 not in the report.</p> <p>15 So, again, that's something I would have 16 to -- to dig up by looking at our private well data.</p> <p>17 Q. Do you know what percentage of the 18 population in California is served by surface water 19 and not groundwater?</p> <p>20 A. I have the numbers. I have looked at 21 the numbers in the past. But I don't remember what 22 they are. It's probably 40 to 60 percent, something 23 like that.</p> <p>24 Q. Upwards of 50 percent, in your 25 opinion are -- of Californians are served by surface</p>	<p style="text-align: center;">Page 492</p> <p>1 Q. And the gist of your answer was you 2 have 22 years of professional experience in the area, 3 based on the fact that you've been doing, among other 4 things, research on site remediation, correct?</p> <p>5 A. Yes.</p> <p>6 Q. Okay. What do you consider 7 remediation to be?</p> <p>8 A. Groundwater remediation is the 9 cleanup of contaminant concentrations to levels that 10 are safe for drinking water and pursuant to state 11 regulations on -- on the acceptable concentrations or 12 maximum contaminant limits.</p> <p>13 Q. Are you familiar with different 14 remedial techniques?</p> <p>15 A. Yes.</p> <p>16 Q. Is soil vapor extraction a remedial 17 technique?</p> <p>18 A. Yes.</p> <p>19 Q. And pump and treat is another one?</p> <p>20 A. Yes.</p> <p>21 Q. Air sparging is another type of 22 remediation?</p> <p>23 A. Yes.</p> <p>24 Q. Do you consider soil excavation of 25 contaminated soil to be a type of remediation?</p>
<p style="text-align: center;">Page 491</p> <p>1 water and not groundwater, correct?</p> <p>2 A. That's my recollection.</p> <p>3 MR. COX: Let me take a break and confer 4 with my colleagues to see --</p> <p>5 MR. MILLER: I will leave the room and make 6 it quicker.</p> <p>7 THE VIDEOGRAPHER: With the approval of 8 counsel, we are going off the record. The time is 9 approximately 11:34 a.m.</p> <p>10 (Recess taken.)</p> <p>11 THE VIDEOGRAPHER: With the approval of 12 counsel, we are back on the record. The time is 13 approximately 11:41 a.m.</p> <p>14 EXAMINATION</p> <p>15 BY MR. PARKER:</p> <p>16 Q. Dr. Fogg, my name is Jeff Parker. As 17 I mentioned, I represent ExxonMobil Corporation and 18 ExxonMobil Oil Corporation. I'm going to ask you a 19 few follow-up questions here, okay?</p> <p>20 A. Okay.</p> <p>21 Q. Mr. Anderson asked you some questions 22 about your experience and your expertise in 23 remediation. Do you remember generally those 24 questions?</p> <p>25 A. Yes.</p>	<p style="text-align: center;">Page 493</p> <p>1 A. Yes. For soil contamination or for 2 source removal that could eventually be a groundwater 3 source, yes.</p> <p>4 Q. Do you consider monitored natural 5 attenuation to be remediation?</p> <p>6 MR. MILLER: Objection. Vague and 7 ambiguous. Argumentative.</p> <p>8 Go ahead.</p> <p>9 THE WITNESS: It depends on the context. It 10 can be an effective remedial measure for certain 11 compounds and certain conditions.</p> <p>12 BY MR. PARKER:</p> <p>13 Q. But it is a recognized form of 14 remediation? You're just drawing a distinction as to 15 whether it's effective or the degree of 16 effectiveness; is that correct?</p> <p>17 MR. MILLER: Compound.</p> <p>18 THE WITNESS: Well, the word "recognized," 19 implies effectiveness. So EPA and the National 20 Research Council are pretty clear on what they, you 21 know, would recognize -- the conditions under which 22 they would recognize MNA, monitored natural 23 attenuation, as an appropriate remedial measure.</p> <p>24 BY MR. PARKER:</p> <p>25 Q. Do you consider groundwater</p>

30 (Pages 490 to 493)

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Graham E. Fogg, Ph.D.

<p style="text-align: right;">Page 494</p> <p>1 <u>monitoring to be remediation?</u> 2 A. No. 3 Q. Do you consider CPT or cone 4 penetrometer testing to be remediation? 5 A. No.</p> <p>(Discussion held off the written record.)</p> <p>7 BY MR. PARKER:</p> <p>8 Q. Dr. Fogg, if you can please turn to 9 Exhibit 4, which is your rebuttal report, at page 31.</p> <p>10 The second paragraph or section down talks 11 about wells shut down due to threat of MTBE or TBA 12 contamination. Do you see that?</p> <p>13 A. Yes.</p> <p>14 Q. Towards the end of that you 15 reference -- you have a sentence that says, "The 16 three closed wells without detections in the database 17 were shut down due to nearby MTBE plumes, 18 parentheses, South Tahoe Public Utilities District 19 personal communication 2003." Is that correct?</p> <p>20 A. Yes.</p> <p>21 Q. Who is the person that you had these 22 communications with?</p> <p>23 A. I'd have to go back into my files to 24 determine that.</p> <p>25 Q. Was it a telephone or in-person</p>	<p style="text-align: right;">Page 496</p> <p>1 correct? 2 A. That there was a threat of detection 3 in the future, yes.</p> <p>4 Q. You also answered some questions, I 5 think it was in response to Mr. Cox's questioning, 6 about increases in concentrations of MTBE. And I 7 don't think he asked this specific question.</p> <p>8 Are you aware of any data showing increases 9 in the concentrations of MTBE in public water 10 supplies as opposed to increases in the number or 11 frequency of detection?</p> <p>12 A. Well, I have seen data that show 13 increases recently. I don't recall if those data are 14 in the report.</p> <p>15 We do refer to the Dinuba well where some 16 recent concentrations or unsampled concentrations, 17 with respect to the CDPH database, were high or 18 missed.</p> <p>19 We have a lot of data from New Hampshire 20 that show increases in all kinds of wells at 21 different times.</p> <p>22 Q. In California, or specifically with 23 respect to California, have you done any analysis or 24 comparison to see if the levels in the wells that are 25 in the -- the California Department of Public Health</p>
<p style="text-align: right;">Page 495</p> <p>1 communication? 2 A. I don't remember. 3 Q. Is it memorialized in writing 4 somewhere? 5 A. Yes. 6 Q. Handwritten notes, or a journal, or 7 computer, or where? 8 A. Or it may just be in memory of my 9 staff. But that's where I would go to -- to -- to 10 determine who is the person. 11 Q. When you say "personal 12 communications," you also referenced your staff. Do 13 you know whether this is something you personally did 14 or something your staff did? 15 A. My staff was in contact and obtained 16 this information. I might have been on the same 17 phone call or the same meeting. I don't recall. 18 This is years ago. 19 Q. And the closures that you're 20 referring to here for these three wells were not for 21 actual detection of MTBE in the three wells; is that 22 correct? 23 A. That's right. 24 Q. So these were based on someone's 25 belief that there would be a detection in the future,</p>	<p style="text-align: right;">Page 497</p> <p>1 database have stayed the same, increased or 2 decreased? 3 A. We have data on the mean 4 concentrations with time, which just went up a lot 5 mainly, as stated in my report, because of the Dinuba 6 well. And that's the nature -- that's the name of 7 this lognormal distribution of contaminant 8 concentrations. So, you know, you get some high 9 values and the means go up. 10 Q. And maybe my question wasn't clear. 11 I'm talking about -- I'm trying to find out 12 if you've done any analysis on individual wells. I 13 understand that a high detection in a single well 14 like Dinuba will affect aggregate numbers or mean 15 numbers. 16 What I want to know is on Well No. "X," 17 whatever that "X" may be, have you looked at it to 18 see if over the last year or two years or six months, 19 or any time period, it has gone up, down or stayed 20 the same? 21 A. With the CDPH database? 22 Q. Yes. 23 A. You can't do that with that database. 24 Because when there's a detect, they take the wells 25 offline; they find an alternative source.</p>

31 (Pages 494 to 497)

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Graham E. Fogg, Ph.D.

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1 REPORTER'S CERTIFICATE

2 I, SANDRA BUNCH VANDER POL, Certified
3 Shorthand No. 3032 for the State of California do
4 hereby certify:

5 That prior to being examined, the witness
6 named in the foregoing deposition was duly sworn to
7 testify to the truth, the whole truth, and nothing
8 but the truth.

9 That said deposition was taken down by me
10 stenographically at the time and place therein named,
11 and thereafter reduced by me into typewritten form,
12 and that the same is a true, correct and complete
13 transcript of said proceedings.

14 Before completion of the deposition, review of
15 the transcript was requested. Any changes made by
16 the deponent (and if provided to the reporter) during
17 the period allowed are appended hereto.

18 I further certify that I am not interested in
19 the outcome of the litigation.

20 Witness my hand this 2nd day of February,
21 2011.

22
23 SANDRA BUNCH VANDER POL
24 Certified Shorthand Reporter
25 Certificate No. 3032

Golkow Technologies, Inc. - 1.877.370.DEPS

EXHIBIT 14

Deposition of Phi D. Phan / August 16, 2010

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

IN RE: METHYL TERTIARY BUTYL : Master File No.
ETHER ("MTBE") PRODUCTS : 1:00-1898
LIABILITY LITIGATION : MDL 1358 (SAS)
: M21-88

ORANGE COUNTY WATER DISTRICT

v.

UNOCAL CORP., et al.

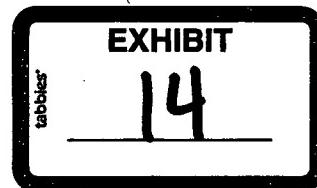
Case No. 04 Civ. 4968 (SAS)

VIDEOTAPED DEPOSITION OF PHI D. PHAN

Monday, August 16, 2010 9:07 a.m.

LOCATION: 650 Town Center Drive, 20th Floor
Costa Mesa, California 92626

REPORTED BY: Debra Kottke, C.S.R. #7422
Registered Professional Reporter



Deposition of Phi D. Phan / August 16, 2010

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1 Q. Now, to your knowledge, when you took over
2 the station around 1990, who owned the underground
3 storage tanks?

4 A. I -- I'm not sure who own it, but I assume
5 that that's Arco.

6 Q. But, when you described what we've been
7 talking about as taking over the station, what
8 exactly did you take over?

9 A. Actually is the franchise that I just get
10 in, take over the business and all of the equipment
11 including the building, the tank, the pumps,
12 everything above ground belong to Arco. And I look
13 at the franchise equipment that I notice that the
14 ground -- I mean, the land belong to a third party.
15 So, when I get in there, I just take over and just
16 run the business. Whatever is there I just keep,
17 assume the business and keep it running.

18 Q. So, when you said you took over the
19 franchise, did you have a lease agreement or
20 franchise agreement?

21 A. Yes. The land equipment was like ten years.
22 When I got in and start a new lease so the lease for
23 the land is going to be from 1990 to 2000. For the
24 lease with Arco it's part of the franchise agreement,
25 I pay the franchise and the lease.

Deposition of Phi D. Phan / August 16, 2010

Page 94

1 Q. On the next page, if you could turn to, it's
2 titled Amendment to Lessee, PMPA Franchise
3 Agreement/Dealer/Premises Lease, Operation of
4 Underground Storage Tanks. There's a date stamp at
5 the top center of D-e-c 11, 1990. Bates at the
6 bottom is 075785. I want to ask you about where it's
7 handwritten in the middle of the page under 2(b)
8 there's four lines and the first line has Hazmat
9 monitoring plan, DBL wall containment and US, it
10 looks like. Next line says, Hazmat monitoring plan
11 DBL wall used, I believe oil tank.

12 Do you recall obtaining those documents from
13 Arco or an Arco representative?

14 A. I don't remember.

15 Q. The text that's typed in below this at No. 3
16 it says, "Where franchisor has provided franchisee a
17 copy of the permit to operate these underground
18 storage tanks, franchisee has read and understood its
19 responsibilities as operator under the permit to
20 operate and agrees to do the following; (A), monitor
21 the underground tanks as specified in the permit to
22 operate and is otherwise required by law."

23 Let me ask you at this point, did you have
24 an understanding as to what your responsibilities
25 were as described here to monitor the underground

Deposition of Phi D. Phan / August 16, 2010

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1 storage tanks?

2 A. Yes.

3 Q. And what were those responsibilities?

4 A. To have you check every day for the alarm
5 operation, make sure it works right. Any time when
6 the monitor doesn't respond or doesn't work right
7 then I have to call Arco right away.

8 Q. When you say you had to check every day, can
9 you describe for us what you did as part of that
10 check you mentioned?

11 A. There's, on the monitor there is a button,
12 it say test. When I press it, as I remember that the
13 light, I don't know how many monitor, I don't
14 remember how many monitors, it should be lit. If any
15 one not lit, then there is some kind of malfunction,
16 then I have to call Arco right away.

17 Q. How many lights were there?

18 A. I don't remember.

19 Q. Was it a light for each underground storage
20 tank or how was it set up?

21 A. As I understood, it's one for each tank, at
22 least one for each tank.

23 Q. And so, when you press the test button, that
24 would cause the lights to come on to see if they were
25 working?

Deposition of Phi D. Phan / August 16, 2010

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1 bottom left is a date of 7/7/97. The Bates range is
2 OCHCA-MTBE-076019 through 076022.

3 BY MR. EICKMEYER:

4 Q. Let me ask you, on the right hand side about
5 halfway down, do you see it says Arco Products
6 Company, Attention Judie, J-u-d-i-e, Mason.

7 Do you see that?

8 A. Yes.

9 Q. Do you have any recollection as to who Judie
10 Mason was?

11 A. No.

12 Q. About three lines above that on the left
13 under your name, it says contact Pete Brito,
14 B-r-i-t-o. Do you have any recollection as to who
15 Pete was? Do you see the name?

16 A. This person?

17 Q. No, sorry, here about the middle of the
18 page, contact Pete Brito or Brito, B-r-i-t-o?

19 A. Oh, yes, he is the previous dealer.

20 Q. Oh, the dealer before you operated?

21 A. Yes.

22 Q. Did you ever discuss with anyone at the
23 County Healthcare Agency that he was no longer the
24 dealer? I mean, by the time this form came out?

25 A. I don't recall, but I assume that they know.

EXHIBIT 15



27141 Aliso Creek Road
Suite 270
Aliso Viejo, California 92656-5305
U.S.A.
949/362-3077
FAX: 949/362-0290

November 16, 2000

Mr. Steven R. Sharp
Hazardous Materials Specialist
Orange County Health Care Agency
Environmental Health Division
Hazardous Material Management Section
2009 East Edinger Avenue
Santa Ana, California 92705-4720

Subject: Work Plan for Vertical Soil Assessment
ARCO Facility No. 1887
16742 Beach Boulevard
Huntington Beach, California
OCHCA Case No. 88UT121.
Delta Project No. L098-611

Dear Mr. Sharp:

Delta Environmental Consultants, Inc. (Delta) was contracted by Atlantic Richfield Company (ARCO) to prepare this *Work Plan for Vertical Soil Assessment* at ARCO Facility No. 1887 (the Site), located at 16742 Beach Boulevard in the City of Huntington Beach, California (Figure 1). This work plan was prepared in response to a request by the Orange County Health Care Agency (OCHCA) in correspondence dated October 17, 2000. The purpose of this assessment is to provide a comprehensive vertical assessment of the presence of fuel-related hydrocarbons in soil beneath the Site.

Site Geology and Hydrogeology

Soil encountered during previous investigations conducted at the Site consists primarily of clay, silty clay, and silt from the ground surface to a depth of approximately 25 to 30 feet below ground surface (bgs). Underlying this upper unit of fine-grained sediments is a sequence of fine- to coarse-grained sand, silty sand, and clayey sand. This sandy unit occurs from depths of approximately 25 to 30 feet bgs to approximately 44 to 45 feet bgs. Underlying this unit, a clay, silt, or silty clay was encountered to a depth of approximately 50 feet bgs (maximum depth explored). This lower fine-grained unit was identified in on-site borings MW-8, MW-9, MW-10, MW-11, MW-14, and MW-15.

During previous investigations at the Site, groundwater is generally first encountered during drilling at depths ranging from about 27 to 31 feet bgs. This depth corresponds with the sandy unit identified beneath the Site occurring from depths of approximately 25 to 30 feet bgs to approximately 44 to 45 feet bgs. Groundwater levels measured in monitoring wells fluctuate annually about 5 feet and, historically, groundwater levels have fluctuated from approximately 13 to 24 feet bgs. The groundwater beneath the Site generally flows toward the south and southwest.

Brief Soil Assessment History

From 1988 to present, a total of thirty six soil borings have been advanced and sampled to assess the extent and presence of fuel-related hydrocarbons in soil beneath the Site. From the borings, almost 100 soil samples have been collected at depths ranging from 5 to 35 feet bgs. The maximum concentration

EXHIBIT 16



5412 Bolsa Avenue, Suite G
Huntington Beach, California 92649
(714) 230-2495 ~ Fax: (714) 230-2496

July 6, 2010

Ms. Geniece Higgins
Orange County Health Care Agency
Environmental Health Division
1241 East Dyer Road, Suite 120
Santa Ana, California 92705

Re: Quarterly Monitoring and Remediation Report, Second Quarter 2010
ARCO Facility No. 1887
16742 Beach Blvd, Huntington Beach, California
OCHCA Case #88UT121

Dear Ms. Higgins:

Stratus Environmental, Inc. (Stratus) is submitting the Quarterly Monitoring and Remediation Report, Second Quarter 2010, on behalf of Atlantic Richfield Company for ARCO Facility No. 1887, located at 16742 Beach Blvd., Huntington Beach, California.

If you have any questions, please contact David White of Atlantic Richfield Company at (714) 228-6782.

Sincerely,

STRATUS ENVIRONMENTAL, INC.

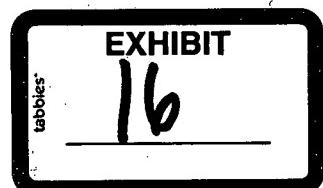
Fabio M. Minervini

Fabio M. Minervini
Project Manager
California Professional Geologist No. 7861



Attachment: Quarterly Monitoring and Remediation Report, Second Quarter 2010

cc: Mr. David White, Atlantic Richfield Company (via Enfos)
Ms. Valerie Jahn-Bull, Santa Ana Regional Water Quality Control Board



**ATLANTIC RICHFIELD COMPANY QUARTERLY MONITORING AND REMEDIATION REPORT
SECOND QUARTER 2010
JULY 6, 2010**

Facility No.: 1887 Address: 16742 Beach Blvd, Huntington Beach, California (Figure 1)
Atlantic Richfield Company Environmental Business Manager: David White / (714) 228-6782 / David. R.White@bp.com
Consulting Company / Contact Information: Stratus Environmental, Inc. / Fabio Minervini
(714) 622-3928 / fminervini@stratusinc.com
Primary Agency / Contact Person / Regulatory ID No.: Orange County Local Oversight Program (OCLOP) /
Geniece Higgins / 88UT121
Other Agencies to Receive Copies: California Regional Water Quality Control Board-Santa Ana
Region (CRWQCB-SA) / Valerie Jahn-Bull / 083000997T

WORK PERFORMED THIS QUARTERLY REPORTING PERIOD (Second - 2010):

1. Stratus Environmental Inc. (Stratus) submitted the first quarter 2010 *Quarterly Monitoring Report* to the OCLOP on March 24, 2010.
2. Continued operation and maintenance of the dual-phase extraction (DPE) system, which consists of separate groundwater extraction (GWE) and soil vapor extraction (SVE) systems. On May 4, 2010, the DPE system was shut down in preparation for the upcoming persulfate injection pilot test activities. During this reporting period, the GWE system recovered 7,000 gallons of groundwater and the SVE system recovered approximately 9.3 pounds of hydrocarbons. A remediation system summary is included as Attachment A. The water recovered by the GWE system was removed from the site on a weekly basis and disposed at DeMenno Kerdoon (waste disposal manifests are included in Attachment B).
3. Doulas Environmental conducted quarterly groundwater monitoring and purge sampling activities on May 19 and 20, 2010 (field data sheets are included as Attachment C). The DPE system was not operating at the time of sampling. Groundwater monitoring activities were coordinated with monitoring activities conducted at the former Shell Station located north of Terry Drive (the second quarter 2010 groundwater data provided by the Shell's consultant is included as Attachment D). Groundwater samples were analyzed for gasoline range organics (GRO) according to Environmental Protection Agency (EPA) Method 8015M and for benzene, ethylbenzene, toluene, xylenes, (BTEX, collectively) methyl *tert*-butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl *tert*-butyl ether (ETBE), *tert*-amyl methyl ether (TAME), *tert*-butanol (TBA), ethanol, and additional volatile organic compounds (VOCs) according to EPA Method 8260B full scan. In addition, groundwater samples from select wells (including four of the five wells sampled annually during the first quarter) were analyzed for specific geochemical parameters in water and dissolved gasses to evaluate baseline groundwater conditions, prior to the proposed corrective action activities.

A site plan, current groundwater elevation contour, groundwater analyses, and isoconcentration maps for GRO, benzene, MTBE and TBA for the upper groundwater zone are presented on Figures 2 through 8, respectively. The current groundwater elevation contour and analysis map for the lower groundwater zone is presented on Figure 9. Current groundwater monitoring data, historical groundwater gauging data, historical groundwater analytical results, analytical results for additional VOCs, and groundwater geochemical parameter data are presented in Tables 1, 2, 3, 4, and 5 respectively. The monitoring schedule and well construction details are presented in Table 6. Manifests for the removal of purged groundwater are included in Attachment B. A copy of the laboratory analytical report and chain-of-custody documentation is included in Attachment E.

WORK PROPOSED FOR THE NEXT QUARTERLY REPORTING PERIOD (Third - 2010):

1. Submit the second quarter 2010 quarterly monitoring report to the OCLOP within 45-days of the sampling event.
2. Conduct quarterly groundwater monitoring and sampling.
3. Implement the *Work Plan for Oxidant Injection Pilot Testing* dated August 11, 2009.

Current Phase of Project: Groundwater Monitoring / Remediation
Site Use: Vacant Paved Lot
Status of Remediation Systems: GWE and SVE Systems
Frequency of Sampling: Groundwater – Quarterly (13 Wells), Annually (5 Wells)
Vapor – Monthly
Frequency of Monitoring: Groundwater – Quarterly; Vapor – Weekly

REMEDIATION SYSTEM SUMMARY – SECOND QUARTER 2010
FORMER ARCO FACILITY NO. 1887
16742 BEACH BOULEVARD
HUNTINGTON BEACH, CALIFORNIA

HISTORICAL INFORMATION:

A soil vapor extraction (SVE) system was initially started on March 19, 1997. The system consisted of a Baker™ Furnace thermal/catalytic oxidizer connected to three main manifolds (Manifolds A, B and C). Manifold A was connected to wells P-2, B-5, B-6, B-7, B-8, and B-9. Manifold B was connected to wells P-1, MW-3, MW-7, and B-20. Manifold C was connected to wells MW-5, MW-6, B-21, B-27, MW-12, MW-13, and B-28.

Delta Environmental Consultants, Inc. (Delta) assumed responsibility for operation of the SVE system on May 6, 1999. In February 2000, newly installed vadose well B-30 was added to the SVE system.

The SVE system was manually shutdown on June 6, 2001 in order to conduct system modifications in preparation for dual-phase extraction (DPE) Bubblex™ pilot testing activities. On August 1, 2001, following modifications to the SVE system, DPE pilot test activities were initiated with Bubblex™ stingers (used for groundwater extraction) installed in wells MW-7 and MW-13. The pilot test was conducted through October 29, 2001. During the pilot test, approximately 92,000 gallons of groundwater were extracted, treated, and discharged to the storm drain under an NPDES permit. On November 16, 2001, Tait Environmental (Tait) submitted a *Performance Report of 90-day Bubblex Two-Phase Extraction Test*.

From September 18, 2002 through October 20, 2002, Tait conducted DPE activities at the Site. During this time approximately 756 pounds of hydrocarbons and 34,457 gallons of groundwater were removed from the subsurface. During the remainder to 2002 and the first quarter 2003, the system remained off for extensive repairs to the Baker™ thermal oxidizer (including the chart recorder, process blower, combustion blower, electrical panel) and the groundwater extraction and treatment system portion of the system (including re-piping and stinger adjustments to the well field, rebuilding of the knock-out (k.o.) sump for safety concerns, and re-piping of the groundwater transfer lines). In August 2002 a new NPDES permit, with more stringent requirements, was issued.

Following repairs, Delta restarted the DPE system on July 8, 2003. Prior to restart, the DPE system piping was modified to connect to wells MW-7, MW-19S, B-5, B-27, B-28, B-30, B-36, and BC-3. Above ground lateral piping was used to connect to the wells. Extracted groundwater was stored temporarily in the holding tank and was removed via vacuum truck for off-site treatment and disposal.

In 2006, due to scaling and corrosion problems, the DPE system was modified into two separate systems, SVE and groundwater extraction (GWE). These modifications consisted of 1) the installation of pneumatically operated down well extraction pumps in existing wells MW-6, BC-3, B-27, and B-28, 2) modifications to the well heads of MW-6, BC-3, B-27, and B-28 to allow simultaneous soil vapor and groundwater extraction, 3) installation of lateral air supply and water discharge lines from wells MW-6, BC-3, B-27, and B-28 to the system enclosure, and 4) installation of an air compressor to operate the pneumatic down well pumps. Groundwater extraction (GWE) was initiated on March 30, 2006. The SVE system was restarted on March 31, 2006.

ACTIVITIES DURING THIS REPORTING PERIOD (Second Quarter 2010)

During the second quarter 2010, the DPE (SVE and GWE) system operation uptime was approximately 86%. The system operated until May 4, 2010, when it was shut down pending persulfate injection pilot test activities. SVE was conducted on wells B-5, B-27, B-28, B-30, B-36, BC-3, MW-6, MW-7, and MW-19s. Groundwater extraction was conducted on wells BC-3, B-27, B-28, and MW-6.

The SVE system operated for approximately 1,265 hours and removed approximately 9.3 pounds of hydrocarbons from the subsurface (Table 1). Monthly influent and effluent air samples were collected on March 16 and April 14, 2010. Analytical results for the influent vapor sample indicate that gasoline range organics (GRO) were detected at concentrations of 7.8 ppmv and 4.7 ppmv, respectively; and benzene was not detected at or above the laboratory reporting limit of 0.059 ppmv. In addition, on March 24, 2010, individual samples were collected from each of the nine wells used for SVE. Analytical results for the samples indicate that GRO was detected in six of the nine wells at concentrations ranging from 2.5 ppmv (MW-7) to 30 ppmv (BC-3); benzene was only detected in wells B-27 and B-30, at concentrations of 0.20 and 0.099 ppmv, respectively; and none of the other constituents analyzed was detected above their respective laboratory reporting limits. To date, the SVE system has operated for 42,650 hours and has recovered an estimated 6,997 pounds of hydrocarbons from the subsurface (Table 1).

EXHIBIT 17



5412 Bolsa Avenue, Suite G
Huntington Beach, California 92649
(714) 230-2495 ~ Fax: (714) 230-2496

January 14, 2011

Ms. Geniece Higgins
Orange County Health Care Agency
Environmental Health Division
1241 East Dyer Road, Suite 120
Santa Ana, California 92705

Re: Quarterly Monitoring Report, Fourth Quarter 2010
ARCO Facility No. 1887
16742 Beach Blvd, Huntington Beach, California
OCHCA Case #88UT121

Dear Ms. Higgins:

Stratus Environmental, Inc. (Stratus) is submitting the Quarterly Monitoring Report, Fourth Quarter 2010, on behalf of Atlantic Richfield Company for ARCO Facility No. 1887, located at 16742 Beach Blvd., Huntington Beach, California.

If you have any questions, please contact David White of Atlantic Richfield Company at (714) 228-6782.

Sincerely,

STRATUS ENVIRONMENTAL, INC.

Fabio M. Minervini

Fabio M. Minervini
Project Manager
California Professional Geologist No. 7861



Attachment: Quarterly Monitoring Report, Fourth Quarter 2010

cc: Mr. David White, Atlantic Richfield Company (via Enfos)
Ms. Valerie Jahn-Bull, Santa Ana Regional Water Quality Control Board

EXHIBIT

17

Table 1
Current Groundwater Monitoring Data
Arco Facility No. 1387
16742 Beach Boulevard
Huntington Beach, California

	Screen Interval	TOC	Depth to Water	Benzene	Toluene	Ethylnitrobenzene	Xylenes	MTBE	DPE	ETBE	TAME	TBA	Ethanol
Well ID	Collected (feet bgs)	Elevation (feet msl)	(feet)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-2	11/30/2010	10 - 25	22.04	12.96	9.08	ND<50	ND<0.50	ND<1.0	ND<5.0	ND<5.0	ND<5.0	ND<10	ND>150
MW-3	11/30/2010	10 - 25	22.31	13.38	8.93	11.0	ND<0.50	0.99	ND<1.0	ND<5.0	ND<5.0	ND<10	ND>150
MW-6	11/30/2010	10 - 25	23.71	14.68	9.03	1,100	85	ND<2.5	24	ND<5.0	ND<25	ND<25	ND<750
MW-7	11/30/2010	10 - 25	22.29	13.35	8.94	240	12	ND<0.50	12	ND<1.0	12	ND<5.0	ND<10
MW-10R	11/30/2010	32 - 44	24.26									160	ND>150
MW-11	11/30/2010	27 - 47	23.11										
MW-17	11/30/2010	15 - 25	24.46	15.73	8.73	ND<50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	ND<5.0	ND<10	ND>150
MW-18	11/30/2010	40 - 45	24.21										
MW-19S	11/30/2010	5 - 25	24.58	16.04	8.54	30,000	4,600	700	1,500	6,100	130	ND<50	460
MW-19d	11/30/2010	34 - 44	24.40										
MW-20S	11/30/2010	5 - 25	24.12	15.27	8.85	64	ND<0.50	ND<0.50	ND<1.0	ND<5.0	ND<5.0	ND<10	ND>150
MW-20d	11/30/2010	34 - 44	24.21										
MW-21	11/30/2010	10 - 25	23.65	14.72	8.93	ND<50	ND<0.50	ND<0.50	ND<1.0	6.8	ND<5.0	ND<10	ND>150
B-27	11/30/2010	--	--	14.69	--	160	23	0.94	2.4	7.7	24	ND<5.0	170
B-28	11/30/2010	--	--	12.28	--	260	32	0.55	1.4	1.3	82	ND<5.0	930
B-36	11/30/2010	5 - 25	24.20	15.24	8.96	160	ND<50	ND<5.0	ND<10	ND<50	ND<50	ND<100	ND>150
BC-1	11/30/2010	10 - 25	24.60	16.01	8.59	ND<50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	ND<5.0	ND<10	ND>150
BC-2	11/30/2010	10 - 25	22.15	13.22	8.93	ND<50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	ND<5.0	ND<10	ND>150
BC-3	11/30/2010	10 - 25	23.45	14.66	8.79	33,000	7,900	110	2,900	1,300	2,400	ND<250	5,800
BC-4	11/30/2010	10 - 25	23.71	15.09	8.62	ND<50	ND<0.50	0.75	ND<1.0	ND<5.0	ND<5.0	ND<10	ND>150

Notes:

bgs = below ground surface
msl = mean sea level
µg/l = micrograms per liter

TOC = top of well casing
GRO = gasoline range organics
MTBE = methyl tertiary butyl ether

DPE = di-isopropyl ether
ETBE = ethyl tertiary butyl ether
TAME = tertiary amyl methyl ether
TBA = tertiary butyl alcohol
-- = not available or not applicable
Analysis by EPA Method 8260B for BTEX, MTBE, DPE, ETBE, TAME, TBA, and Ethanol.
Analysis by EPA Method 8015 (modified) for GRO

Prior to 2009, samples analyzed for TPH according to EPA 8015/8015M. As of 2009, samples are analyzed for GRO 3015M.

EXHIBIT 18

**OCWD/RWQCB MEMORANDUM OF UNDERSTANDING
re GROUNDWATER QUALITY
INVESTIGATIONS, CLEAN-UPS AND ENFORCEMENT**

THIS MEMORANDUM OF UNDERSTANDING is entered into as of April 19, 1989, by and between the CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SANTA ANA REGION ("Regional Board") and the ORANGE COUNTY WATER DISTRICT ("OCWD"), for the purpose of establishing a cooperative and coordinated framework for the investigation, clean-up and abatement of groundwater contaminants and pollutants within the Lower Santa Ana River Groundwater basin within the boundaries of OCWD.

RECITALS

16

Exhibit No.	16
Date:	1/10/06
Witness:	HERNDON
Sandra Bunch, CSR 3032	

A. The lower Santa Ana River groundwater basin (hereinafter, the "Groundwater Basin") is located in Orange County, California, and within the boundaries of both the Regional Board and OCWD. The water resources within the Groundwater Basin satisfy the majority of the beneficial water demands of the approximately 1,700,000 residents, water users and lands overlying the Groundwater Basin, and both OCWD and the Regional Board recognize that the Groundwater Basin represents a resource that must be protected in terms of both the quantity and quality of its groundwater supplies.

JFR:R-MOU



-1-

EXHIBIT
CDP 1889-4-81

B. Pursuant to the provisions of the Porter-Cologne Water Quality Control Act, California Water Code Section 13000, et seq., the Regional Board has the power authority to prevent, clean-up and abate any actual or threatened contamination of or pollution to surface water or groundwater resources within its boundaries, and further has the responsibility to obtain coordinated action in water quality control, including the prevention and abatement of water pollution and nuisance.

C. Pursuant to the Orange County Water District Act, Chapter 924 of the California Statutes of 1933, as amended, OCWD has the duty to manage and protect the quantity and quality of the water resources within the Groundwater Basin, and further is authorized both to participate in proceedings to prevent, correct and clean-up pollution of or contamination to the Groundwater Basin, and to enter on to all lands within its boundaries to carry on any investigations necessary to determine the nature and extent of actual or threatened surface water and groundwater contamination or pollution.

D. The Regional Board and OCWD are vested with similar powers to investigate, clean-up and protect the quality of the groundwater resources within the Groundwater Basin, and share common goals in maintaining, protecting and enhancing the quality of such groundwater resources.

E. By virtue of its exercise of its statutory powers, OCWD has extensive experience and expertise in the investigation and clean-up of contamination of and pollution to the Groundwater Basin; and the Regional Board recognizes the benefit to the People of the State of California generally, and the residents and water users within the boundaries of OCWD in particular, in involving OCWD in the investigation and clean-up of actual and threatened contamination of and pollution to the Groundwater Basin.

NOW, THEREFORE, the ORANGE COUNTY WATER DISTRICT and the REGIONAL WATER QUALITY CONTROL BOARD, SANTA ANA REGION, hereby agree to a cooperative and coordinated policy of investigating, cleaning-up and abating actual and threatened discharges to the Lower Santa Ana River Groundwater Basin within the boundaries of the ORANGE COUNTY WATER DISTRICT that contaminate or pollute the groundwater resources therein, as follows:

1. The Regional Board and the District recognize that budgetary or personnel constraints beyond the control of either party may impact the parties' ability to fulfill the terms of this agreement. The Regional Board and the District shall exercise best efforts to complete work identified in this agreement, within the limits of those constraints.

2. In the event that either the Regional Board or District discovers or is made aware of a discharge of waste that is

causing or threatens to cause pollution of the Groundwater Basin and, as such, poses a significant threat to the groundwater resources therein, provided the Regional Board has, in its own discretion, sufficient information, justification and authority to so order, the Regional Board shall expeditiously direct the discharger(s) to cause an investigation to be conducted as quickly as practicable to determine the nature and extent of the actual or threatened pollution of the Groundwater Basin, prepare a proposed plan for consideration by the Regional Board to provide for clean-up and abatement of all effects of such contamination, and expeditiously implement such plan.

3. In the event that the Regional Board and District suspect any actual or threatened discharge to the Groundwater Basin that could pollute the groundwater resources therein and, as such may potentially pose a significant threat to the Groundwater Basin, and if the Regional Board, in its own discretion, lacks the authority or justification, based on insufficient information, to order the suspected discharger to expeditiously implement an investigation to determine the nature and extent of the contamination to the Groundwater Basin or implement an interim action program to contain, remove, clean-up, or otherwise abate the effects of the discharge, then the District may undertake the necessary work to provide such information which would afford the Regional Board the justification and authority to order the suspected discharger to initiate the required investigative, removal, clean-up, and/or

abatement work. In this regard, the Regional Board shall negotiate in good faith with the suspected discharger or take all actions reasonably necessary to permit the District to enter upon the premises of such lands for the purpose of undertaking such work.

4. In the event that the District formally determines that a discharge as described in 2 or 3 hereinabove constitutes an immediate threat to the groundwater basin or its producers or users either due to volume of discharge, chemical composition of discharge, proximity to wells, or hydrologic considerations, and if the Regional Board agrees with the District's determination, unless it formally finds the District's determination to be unreasonable or determines on its own discretion that it lacks authority to order such a program, the Regional Board shall expeditiously order the discharger to immediately implement an interim action program to contain, remove, clean-up, and otherwise abate the effects of the discharge, as appropriate. Such program shall continue until the necessary investigation and plans for a final clean-up program are completed and such final clean-up program is operational and implemented. In this regard, the discharger may retain District, and District consents to be retained by discharger, to perform laboratory analyses of water samples if necessary to comply with the Regional Board order requirements.

5. In the event that any discharger refuses to comply with such orders described in Section 2 or 4 hereinabove or within time limits required by the Regional Board, or if a responsible discharger cannot be identified, the Regional Board shall, within the limits of its authority and resources, expeditiously cause the conduct of all necessary work as originally ordered upon the discharger as described in Section 2 above, or as determined necessary as described in Section 4 hereinabove, and shall exercise its enforcement powers to the fullest extent necessary to implement such work. In this regard, the Regional Board may request the District to perform such work and shall negotiate in good faith with the suspected discharger or take all actions reasonably necessary to permit the District to enter upon the premises of such lands for the purpose of undertaking such work. In the event the District performs such work at the request of the Regional Board, the Regional Board shall, independently or in concert with the District, seek reimbursement for the District for costs incurred in providing such information to Regional Board from funds available through the Clean-up and Abatement Account, CERCLA, or any other means available to Regional Board.

6. The Regional Board and District shall each coordinate with the other regarding any investigations, actions or activities undertaken pursuant to Sections 2, 3, 4 and 5 hereinabove, and the Regional Board and District shall each cooperate with each other regarding any such investigations, actions or

activities, including but not limited to the sharing of any information derived from any such investigations, and in planning for and implementing the prevention, clean-up and abatement of any actual or threatened pollution of the Groundwater Basin.

APPROVED AS TO FORM:
RUTAN & TUCKER

ORANGE COUNTY WATER DISTRICT

By: David B. Corrigan
General Counsel, OCWD

By: Lawrence P. Kraemer Jr., President
Lawrence P. Kraemer Jr., President

By: William R. Mills Jr.
William R. Mills Jr., General Manager

REGIONAL WATER QUALITY CONTROL
BOARD, SANTA ANA REGION

By: Anita B. Smith
Anita Smith, Chairwoman

EXHIBIT 19



UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

IN RE: METHYL TERTIARY BUTYL
ETHER ("MTBE") PRODUCTS
LIABILITY LITIGATION

Master File No. 1:00-1898
MDL 1358 (SAS)
M21-88

This document relates to:

Orange County Water District v. Unocal
Corp., et al., No. 04 Civ. 4968

SUPPLEMENTAL DECLARATION OF DAVID BOLIN IN SUPPORT OF PLAINTIFF
ORANGE COUNTY WATER DISTRICT'S RESPONSE TO DEFENDANTS' FURTHER
SUPPLEMENTAL MEMORANDUM RE SUMMARY JUDGMENT MOTION ON
STATUTE OF LIMITATIONS



DECLARATION OF DAVID BOLIN

I, David Bolin, hereby declare:

1. I am a certified hydrogeologist currently employed by the Orange County Water District (the "District").
2. I have reviewed information involving MTBE and remediation efforts at the gasoline stations associated with focus plumes in this case, including numerous site remediation reports. I have been deposed by defendants with respect to a number of these stations.
3. I have attended depositions of defendants' persons most qualified with respect to remediation at a number of the stations.
4. The term "site" in the context of remediation does not mean the boundaries of the property where a release occurred, but rather means the geographic area within which remediation is occurring. Defendants' consultants themselves use the term "site" to include the geographic area within which remedial efforts are occurring. Defendants' consultants also consider monitoring wells installed for the purpose of plume delineation to be part of the "site" where remediation is occurring.
5. I assisted in the preparation of the "accrual chart" submitted to the Court on February 6, 2009. In particular, I reviewed site remediation reports for stations associated with focus plumes. Based on this review, I provided my professional opinion regarding which wells would be considered to be part of remedial efforts at a site, and which wells would be considered to be sufficiently downgradient, and away from, remediation systems so as to provide meaningful information as to whether contaminants were escaping remedial efforts.

12. With respect to Table 1D of Mr. Costley's declaration, Mr. Costley's accrual date is based solely on detections of MTBE in monitoring wells that are "on site" under even Mr. Costley's definition of that term. Levels of contamination reflected in the monitoring well data cited by Mr. Costley are consistent with core remedial activities at almost any site. Because these wells are part of the remedial activities, they do not provide any indication as to whether MTBE has escaped remediation at this station.

13. Exhibit 1E to Mr. Costley's Declaration identifies five stations at which the District concluded that its claims were not ripe. Mr. Costley identifies "off-site" wells with pre-May 6, 2000, MTBE detections above 5 ppb, but does not address the fact that the District's injury does not accrue unless and until there is evidence *both* that MTBE has escaped remediation *and* that the escaped MTBE has contaminated or threatens to contaminate drinking water. The District's conclusion that its claims with respect to stations listed in Costley Exhibit 1E are not ripe was based upon absence of current evidence that MTBE released from these stations has contaminated or threatens to contaminate drinking water. Mr. Costley simply does not address this necessary element of a claim by the District.

Bellwether Plume No. 1

14. **Arco #1887:** Mr. Costley cites MW-15, MW-17 and BC-1 at the Arco # 1887 station associated with Plume 1 as examples of where "off-site" wells showed detections of MTBE prior to May 6, 2000, at a site where the District concluded there were no off-site wells, and therefore detections of MTBE in the nearest production well provided the date on which the District's cause of action accrued for releases from the station. See Costley Decl., Ex. 1B. The monitoring wells cited by Mr. Costley are associated with core remedial activities at this station

and therefore are not off site from the remediation. Groundwater contour maps demonstrate that the shallow groundwater flow is principally to the South - Southeast at this station. (Ex. 1.) MW-15 and MW-17 are in very close proximity to the station and on an property adjacent to the station. BC-1 is located in the street in front of the station and is not down-gradient from the release. In my opinion as a hydrogeologist with extensive experience in remediation, the location of these wells (their proximity and gradient direction) indicates that they are associated with the core remedial activities at this station. The most recent remediation reports for the Arco # 1887 site do not indicate that further efforts to define the plume or expand the area of remediation are underway or anticipated. Therefore, the first real hydrogeologic evidence that MTBE has escaped was the MTBE detection in the production well associated with Plume 1.

15. **Exxon #7-4283:** Mr. Costley cites MW-8 at the Exxon #7-4283 station associated with Plume 1 as an example of where an "off-site" well showed detections of MTBE prior to May 6, 2000. *See* Costley Decl., Ex. 1A. These wells, however, do not indicate that MTBE has escaped remediation at this site. Groundwater contour maps demonstrate that the shallow groundwater flow is principally to the East - Northeast at this station. (Ex. 2.) MW-8 is in close proximity to the station, particularly the remediation system, and is screened very shallow. MW-13i, on the other hand, is located downgradient of the release, is located at a greater distance from the remediation system, and is screened in the deeper zone. MW-13i, therefore, is the furthest downgradient well from the release site and showed an MTBE detection of 5.6 ppb in 2005. The most recent remediation reports for the Exxon #7-4283 do not indicate that further efforts to define the plume or expand the area of remediation are underway or anticipated. In my opinion as a hydrogeologist with extensive experience in remediation, this

hydrogeologist with extensive experience in remediation, this detection in MW-15 is the first real indication at this site that MTBE has escaped active remediation efforts and is threatening drinking water sources.

Citing to summaries prepared by me for my deposition on this station, defendants' assert that the District "acknowledges" pre-May 6, 2000, detections of MTBE in the wells cited by Mr. Costley. (See Defendants' Rule 56.1 Statement at ¶ 15.) This assertion misrepresents my site summary which was created solely for the purpose of preparing for my deposition as the District's Rule 30(b)(6) witness concerning the Mobil #18-JMY station and not for purposes of determining accrual dates for this station.

Bellwether Plume No. 3

26. **Arco #1905:** Mr. Costley cites W-26 and W-27 at the Arco #1905 station associated with Plume 3 as examples of where "off-site" wells showed detections of MTBE prior to May 6, 2000, at a site where the District concluded there were no off-site wells, and therefore detections of MTBE in the nearest appropriate well provided the date on which the District's cause of action accrued for releases from the station. See Costley Decl., Ex. 1B. These wells, however, do not indicate that MTBE has escaped remediation at this site. Groundwater contour maps demonstrate that the shallow groundwater flow is principally to the Southeast at this station. (Ex. 9.) W-26 and W-27 are located in close proximity to the release at the station and appear to be part of core remedial efforts. The most recent remediation reports for the Arco # 1905 site do not indicate that further efforts to define the plume or expand the area of remediation are underway or anticipated. In my opinion as a hydrogeologist with extensive experience in remediation, W-26 and W-27 are associated with the core remedial activities at this

station. Therefore, the first real hydrogeologic evidence that MTBE had escaped was when MTBE had been detected in the District's monitoring well OCWD-M10.

27. **Arco #1912:** Mr. Costley cites B-5, E-7 and E-15 at the Arco #1912 station associated with Plume 3 as examples of where "off-site" wells showed detections of MTBE prior to May 6, 2000. *See* Costley Decl., Ex. 1A. These wells, however, do not indicate that MTBE has escaped remediation at this site. Groundwater flows at the Arco #1912 are considered variable because groundwater has flowed in multiple directions over time, and has changed direction several times. (Ex. 10.) B-5 is only 5 feet East of the site and, therefore, appears to be part of plume characterization for the purpose of remedial efforts. E-7 is 97 feet from the site, but is located on the property of another designated fuel release site, Thrifty #383. Based on my review of the data from Arco #1912 and Thrifty #383, the MTBE plumes originating at these two sites appear to have commingled, and E-7 MTBE detections may have originated at either or both of these sites. E-7 is located within 50 feet of and, therefore, within the influence of Thrifty's remediation well HVE-1. For these reasons, MTBE detections at E-7 do not demonstrate that MTBE has escaped remediation. E-15 is only 20 feet from site and, according to Arco's consultant, has been used for purposes of core remedial activities. MW-8 is located downgradient of the furthest extent of the MTBE plume at Arco #1912 and has had detections of MTBE consistent with MTBE concentrations associated with this site. Prior to 2002, MW-8 was associated with and run by the adjacent Beacon Bay Car Wash station. In 2002, Arco assumed responsibility for operating and sampling MW-8 likely due to post-2000 conclusions that the MTBE in MW-8 may originated at either the Beacon Bay or Arco stations. The most recent remediation reports for the Arco #1912 do not indicate that further efforts to define the plume or

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed this 3rd day of June 2009 at Fountain Valley, California.



A handwritten signature in black ink, appearing to read "David Bolin". The signature is fluid and cursive, with a horizontal line drawn underneath it.

DAVID BOLIN

EXHIBIT 20

Deposition of Amer Masri / August 26, 2010

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

ORANGE COUNTY WATER DISTRICT,)
)
Plaintiff,)
)
VS.) Case No. 04 CIV. 4968
)
UNOCAL CORPORATION, et al.,)
)
Defendants.)

VIDEOTAPED DEPOSITION of AMER MASRI, taken
on behalf of the Plaintiff, at 650 Town Center
Drive, Fourth Floor, in the City of Costa Mesa,
California, commencing at 1:06 p.m., on Thursday,
August 26, 2010, before Denise Paholski, Certified
Shorthand Reporter No. 10742 in the State of
California.

--oo--



Deposition of Amer Masri / August 26, 2010

Page 6

1 Q And we're here primarily to talk about
2 ARCO Station No. 1905, which was located at 18025
3 Magnolia Street in Fountain Valley. Did you operate
4 that station for a period of time?

5 A Yes, I did.

6 Q And what period of time did you operate
7 the station?

8 A From 1980 till around 1985, and I sold in
9 1990.

10 Q And between 1985 and 1990 did you have
11 somebody else helping you?

12 A I had the manager.

13 Q And do you recall when in 1990 you sold
14 your interest in the station?

15 A In the end of the year. Not exact.

16 Q Have you ever had your deposition taken
17 before?

18 A No, not yet. I was supposed to be here
19 and I missed that at that time.

20 Q Right. You were supposed to be here a
21 couple days ago but there was some confusion about
22 that.

23 A Right. Sorry.

24 Q At any other time have you been deposed
25 before?

Deposition of Amer Masri / August 26, 2010

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1 A By me?

2 Q Yeah.

3 A In the beginning I used to open and never
4 leave before 4:00 for about the first few years,
5 yeah.

6 Q From about 6:00 a.m. until 4:00 a.m -- or
7 4:00 p.m. at the minimum?

8 A Yeah.

9 Q And then who operated the station after
10 4:00?

11 A Always two people in the afternoon.
12 Always have a manager for the afternoon guy.

13 Q And who was the second person?

14 A Different people. Different --

15 Q Was it like a cashier, though?

16 A Yeah, they're both cashier but one of them
17 would have the authority to decide if there's
18 anything comes up.

19 Q Was there a repair shop?

20 A I had a mechanic, yeah.

21 Q Okay. And would he work during the time
22 you were there?

23 A He worked while I'm there and he stayed
24 after his time, after I leave. Depend how much work
25 he has. He set up his own hours depending on the

Deposition of Amer Masri / August 26, 2010

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1 work he has.

2 Q And so you typically would have a manager
3 on site who was either you or the manager you hired,
4 a cashier and a mechanic?

5 A Yes, sir.

6 Q And did you ever have anybody else on site
7 during periods of the day when it was particularly
8 busy or anything else?

9 A There was one time I hired an old man,
10 Michael Hernandez, and he was helping me in the
11 morning. And when he died I never replaced him.

12 Q Do you recall what years Michael Hernandez
13 was working at the station, approximately?

14 A Till '75. '74, '75.

15 Q You mean '84 and '85?

16 A I mean '84, '85. I'm sorry.

17 Q And how about after you hired somebody to
18 manage the station throughout the day in 1985, as I
19 recall, through the end of your lease, what were
20 your hours at the station, typically?

21 A My hours, I'll pass by, see that
22 everything's going okay. I do the books or go over
23 the books after the manager did and go work -- I had
24 a grocery store at the same time. So I used to go
25 in and spend my time at the grocery store, at the

Deposition of Amer Masri / August 26, 2010

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1 was being managed by somebody else?

2 A That was around two hours.

3 Q And did you have an office at the station
4 during that time?

5 A Yes, sir.

6 Q And did you spend most of your time in the
7 office or were you more outside the office, out and
8 about circulating?

9 A Most of the time in the snack bar, snack
10 room. Where is that? In the front.

11 Q The snack shop?

12 A Yeah.

13 Q As they called it?

14 A Yeah.

15 Q And so other than passing by to check on
16 the station and stopping in to do the books and be
17 at the station for a couple hours a day, how would
18 you keep tabs on what was going on at the station
19 while you weren't there during that period of time
20 that somebody else was managing the station?

21 A Well, somehow it was easy for me because
22 we can see 50 percent of the customer, they used to
23 stop at this station, they used to go to my grocery
24 store just 1 mile apart on the same street, and two
25 minutes I'm there if something happened. And the

Deposition of Amer Masri / August 26, 2010

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1 guy who managed my place, he was like my son. I
2 start to know him good, you know, him and his
3 family. So he was loyal to me, and I felt confident
4 everything's -- you know.

5 The gas stations used to run this way.
6 You see a lot of Arabs with no indication of
7 gasoline because all numbers. You know? It doesn't
8 take a brain to subtract one from one and see how
9 much you're supposed to have in your cashbox. And
10 you count the oil and the invoices for that service
11 and that's all. So it was easy to run it from far.

12 Q And just to clarify, the person that ran
13 it, that you trusted, was Mr. Afandi?

14 A Afandi.

15 MR. MASSEY: Exhibit 2 is going to be a map of
16 the station. And my first question will be whether it
17 accurately depicts the layout of the station.

18 For the record, Exhibit 2 bears the Bates
19 prefix AROCWD and it's page number 190500405. And
20 the map does not appear to have a date on it.

21 (Plaintiff's Exhibit 2 was marked for
22 identification and is attached hereto.)

23 THE WITNESS: Yeah, I think that's right.

24 BY MR. MASSEY:

25 Q Okay. Can you draw on that map -- and you

EXHIBIT 21

Deposition of Ann Pham / August 19, 2010

Page 1

1 UNITED STATES DISTRICT COURT
2 SOUTHERN DISTRICT OF NEW YORK
3
4

5 In Re:
6 Methyl Tertiary Butyl Ether ("MTBE") MDL No. 1358 (SAS)
7 Products Liability Litigation
8

9
10 This Document Relates to:
11 Orange County Water District v.
12 Unocal, et al.,
13 Case No. 04 Civ. 4968 (SAS)

14

15

16

17 DEPOSITION OF:

18 ANN PHAM
19 Thursday, August 19, 2010
20 1:00 p.m.

21

22

23 Reported by:

24 Stacy L. Duysings
25 CSR No. 13507



Deposition of Ann Pham / August 19, 2010

Page 8

1 station at that location?

2 A 1990 up to 2008.

3 Q Were you associated with a station at 18025
4 Magnolia Street in Fountain Valley?

5 A Yes.

6 Q Did you lease that station as well?

7 A Yes, I do.

8 Q And have you leased that station since 2003 until
9 the present?

10 A Probably a little bit before 2003, up to now.

11 Q 2002?

12 A Maybe 1999.

13 Q Are those the only two stations that you've been
14 associated with?

15 A Yes.

16 Q Have you ever had your deposition taken before?

17 A No.

18 Q I'm going to first go over some ground rules so you
19 understand how we'll proceed today. You that you understand
20 just took an oath to tell the truth, that your testimony is
21 under penalty of perjury, as if you were in a court law?

22 A Yes, I do.

23 Q So that your answers are clearly recorded, it's
24 important that we talk one at a time. So I would ask that
25 you wait until I finish my question, even if you know what

Deposition of Ann Pham / August 19, 2010

Page 15

1 Q And it's okay to estimate. If you don't know
2 precisely the year, it's okay to estimate.

3 And did you go to college after Miracosta?

4 A Yes. I went to SDSU.

5 Q And did you get a degree from SDSU?

6 A I did not.

7 Q Approximately, what time period were you at SDSU?

8 A 1981.

9 Q Just 1981 as you recall it?

10 A Yes. 1981.

11 Q Okay. And what is your associates degree from
12 Miracosta College in? Did you have a major or specialty?

13 A No. Just general education.

14 Q And did you study anything in particular while you
15 were at San Diego State?

16 A MIS. Management information system.

17 Q Is that, like, computers?

18 A Yes.

19 Q What's your current occupation?

20 A Franchisee.

21 Q And with what company are you a franchisee for?

22 A Arco.

23 Q Is it on your documents that you have Arco, or is
24 it?

25 A BP.

Deposition of Ann Pham / August 19, 2010

Page 29

1 A Yes Q-u-a-n-g. Last name is Pham, P-h-a-m.

2 Q Is he related to you?

3 A Yes.

4 Q How is he related to you?

5 A His great-grandfather is my husband
6 great-grandfather's cousin.

7 Q You have an amazing memory.

8 A But laugh at me.

9 Q And were -- when you weren't at the station -- let
10 me strike that and back up a second.

11 Were you the person who was primarily responsible
12 for the day-to-day operations at the station?

13 A Yes, I was.

14 Q And when you weren't there, were the employees
15 instructed to call you if there was any problem or anything
16 that needed your attention?

17 A Yes.

18 Q I'm going to mark as Exhibit 2 a map and ask you if
19 it accurately depicts the layout of the station. We'll keep
20 the exhibits in front of you because we may refer back to
21 them as we go through the day. And then at the end of the
22 day, you'll leave them here with the court reporter.

23 A Okay.

24 (Exhibit 2 was marked for identification.)

25 BY MR. MASSEY:

Deposition of Ann Pham / August 19, 2010

Page 39

1 Q Okay. When you arrived at the office, would you
2 usually go and inspect the grounds of the station? Or would
3 you just go straight to your office?

4 A I go around and inspect first.

5 Q What were you looking at when the you would go out
6 to inspect the station when you arrived in the morning?

7 A I want to make sure it's clean. I wanted to make
8 sure that all the lights were turned off. I wanted to make
9 sure that all the pump is working, no side post. Make sure
10 that there is no out-of-service sign up. Then I go to my
11 office.

12 Q Okay. Was there a canopy over the dispenser
13 islands?

14 A Yes.

15 Q Did that have rain gutters?

16 A Yes, it does.

17 Q Do you recall where the spout -- where the water
18 would flow out of the rain gutter was?

19 A I see the rain gutter is go down from the bay area,
20 which is the service bay. It just go all the way down to
21 the ground.

22 Q That's for the service station building rain
23 gutter?

24 A But then the canopy connect with the service bay.

25 Q Okay. So if the water that would fall on the

EXHIBIT 22



EMCON
ASSOCIATES
Consultants in Wastes
Management and
Environmental Control

September 10, 1991
Project 715-22.07

Ms Joyce L. Krail, REHS
Orange County Health Care Agency
Public Health Services, Environmental Health Division
2009 East Edinger Avenue
Santa Ana, California 92705

Subject: Remediation Workplan
ARCO Products Company
Service Station No. 1905
18025 Magnolia Avenue
Fountain Valley, California
(OCHCA Case No. 85UT114)

Dear Ms. Krail:

In response to your Item 2 request in the August 19, 1991 letter to Mr. Joseph Tully of ARCO Products Company, EMCON Southwest is pleased to present the attached remediation workplan. Should you have any questions or comments concerning the workplan, do not hesitate to contact the undersigned.

Very truly yours,

EMCON Southwest

Woody Bragaon
Woody Bragaon
Project Engineer

WB/see

Attachment: Remediation Workplan
cc: Mr. Joseph Tully, ARCO
Mr. Greg Siegner, EMCON



LTR7152207B.DOC

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3300 N. San Fernando Blvd., Burbank, California 91504, (818) 841-1160

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AROCWD190501956

EXHIBIT 23



5412 Bolsa Avenue, Suite G
Huntington Beach, California 92649
(714) 230-2495 ~ Fax: (714) 230-2496

December 9, 2010

Ms. Tamara Escobedo
Orange County Health Care Agency
Environmental Health Division
1241 East Dyer Road, Suite 120
Santa Ana, California 92705

Re: Quarterly Monitoring and Remediation Report, Fourth Quarter 2010
ARCO Facility No. 1905
18025 Magnolia Street, Fountain Valley
OCLOP Case No. 85UT114

Dear Ms. Escobedo:

Stratus Environmental, Inc. (Stratus) is submitting the Quarterly Monitoring and Remediation Report, Fourth Quarter 2010, on behalf of Atlantic Richfield Company for ARCO Facility No. 1905, located at 18025 Magnolia Street, Fountain Valley, California

If you have any questions, please contact David White of Atlantic Richfield Company at (714) 228-6782.

Sincerely,

STRATUS ENVIRONMENTAL, INC.

Fabio M. Minervini
Project Manager
California Professional Geologist No. 7861



Attachment: Quarterly Monitoring and Remediation Report, Fourth Quarter 2010

cc: Mr. David White, Atlantic Richfield Company (via Enfos)
Ms. Valerie Jahn-Bull, CRWQCB - Santa Ana Region

EXHIBIT

23

tabbies®

**ATLANTIC RICHFIELD COMPANY QUARTERLY MONITORING AND REMEDIATION REPORT
FOURTH QUARTER 2010
DECEMBER 9, 2010**

Facility No.: 1905 Address: 18025 Magnolia Street, Fountain Valley, California (Figure 1)
Atlantic Richfield Company Environmental Manager: David White / (714) 228-6782 / David.R.White@bp.com
Consulting Co. / Contact Person / Phone No.: Stratus Environmental, Inc. / Fabio M. Minervini / (714) 622-3928 / fminervini@stratusinc.net
Primary Agency / Contact Person / Regulatory ID No.: Orange County Local Oversight Program (OCLOP) / Tamara Escobedo / 85UT114
Other Agencies to Receive Copies: California Regional Water Quality Control Board – Santa Ana Region (CRWQCB-SA) / Valerie Jahn-Bull

WORK PERFORMED THIS REPORTING QUARTERLY PERIOD (Fourth Quarter 2010):

1. Stratus Environmental, Inc. (Stratus) prepared and submitted the *Quarterly Monitoring and Remediation Report – Third Quarter 2010*, dated August 27, 2010, to OCLOP.
2. Continued operation and maintenance of the groundwater extraction (GWE) system. During this reporting period, the GWE system recovered 31,834 gallons. The SVE system was shutdown on May 25, 2010, subsequent to a period of cycling and rebound evaluation test, and did not operate during this reporting period. A remediation system summary and historical operational data are included as Attachment A.
3. Doulas Environmental, Inc conducted quarterly groundwater monitoring and sampling activities on October 27 and 28, 2010 (field data sheets are included as Attachment B). During this event, all nineteen monitoring wells (W-1 through W-4, W-6 through W-10, W-15, W-16, and W-23 through W-30) were gauged and sampled. The GWE system was not operational at the time of sampling; nevertheless, the five monitoring wells connected to the GWE system (W-6, W-7, W-16, W-23, and W-25) plus well W-15, formerly connected to the GWE system, were not purged prior to sampling. All remaining wells were purged using a vacuum truck prior to sampling. Lower water-bearing zone wells W-28 and W-29 were purged and sampled with a peristaltic pump utilizing low-flow methodology. Groundwater samples were analyzed for gasoline range organics (GRO) according to Environmental Protection Agency (EPA) Method 8015M, and for benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyl *tert*-butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl *tert*-butyl ether (ETBE), *tert*-amyl methyl ether (TAME), *tert*-butanol (TBA), and ethanol (EtOH) according to EPA Method 8260B. Groundwater elevation contours, groundwater analyses, and isoconcentration maps for GRO, benzene, MTBE, and TBA are shown as Figures 2 through 7, respectively. Current groundwater monitoring data, historical groundwater gauging data, and historical groundwater analytical results are presented in Tables 1, 2, and 3, respectively. Monitoring schedule and well construction details are presented in Table 4. A copy of the laboratory analytical report with chain-of-custody documentation is included in Attachment C. Water generated during groundwater sampling (220 gallons) was transported to DeMenno/Kerdoon located in Compton, California for disposal. The waste manifests for the water disposal are included in Attachment D.
4. Submitted reports to the Orange County Sanitation District (OCSD) documenting the volume of treated groundwater discharged to the sewer system on a monthly basis and the treatment system effluent sample analytical results on a quarterly basis.

WORK PROPOSED FOR THE NEXT QUARTERLY REPORTING PERIOD (First Quarter 2011):

1. Submit the quarterly monitoring and remediation report for the fourth quarter 2010 to the OCLOP within 45 days following the fourth quarter 2010 groundwater monitoring and sampling event.
2. Continue operation and maintenance of only the GWE system portion of the DPE system.
3. Conduct the first quarter 2011 quarterly groundwater monitoring and sampling event, in accordance with the OCLOP-approved monitoring and sampling schedule.
4. Submit reports to OCSD documenting the volume of treated groundwater discharged to the sewer system on a monthly basis and the treatment system effluent sample analytical results on a quarterly basis.

REMEDIATION SYSTEM SUMMARY – FOURTH QUARTER 2010

ARCO FACILITY NO. 1905
18025 MAGNOLIA STREET
FOUNTAIN VALLEY, CALIFORNIA

SYSTEM INFORMATION AND EXTRACTION WELL NETWORK:

In order to address petroleum hydrocarbon-impacted soil and groundwater beneath the site, a fixed remediation system was installed at the site in 1999. On January 8, 2000, initial startup of the remedial system was conducted. The original system was a dual-phase extraction (DPE) system used to simultaneously conduct groundwater extraction (GWE) and soil vapor extraction (SVE) simultaneously via a network of extraction wells. The DPE system consisted of a Baker™ Furnace 200 catalytic oxidizer equipped with a positive displacement (PD) blower. This equipment was capable of achieving vapor flow rates of up to 200 standard cubic feet per minute (scfm). The system treated the extracted vapors prior to discharge to the atmosphere. The original extraction well network consisted of eight wells (W-2, W-4, W-6, W-7, W-15, W-16, W-23, and W-25). These wells are completed to depths ranging from approximately 17 to 23 feet below ground surface (bgs). Vapor and groundwater were extracted from these wells and routed through underground process piping to a knockout tank where the vapor and water streams were separated. Extracted water was sent via transfer pump into a poly holding tank. From the holding tank groundwater was then treated via bag filter and three aqueous-phase carbon vessels prior to discharge to the sewer system. The treated groundwater was discharged under a Special Purpose Discharge Permit (SPDP) No. 3-116 issued to Atlantic Richfield Company by the Orange County Sanitation District (OCSD).

During the first and second quarter 2007, the DPE system was modified to allow independent operation of the SVE and GWE systems. Wells W-6, W-7, W-15, W-16, W-23, and W-25 are connected to the modified DPE system; however, wells W-2 and W-4 were removed from the DPE system due to low hydrocarbon concentrations.

The GWE portion of the system was restarted on May 14, 2007. The GWE system consists of in well pneumatic pumps, air and groundwater hose, holding tank, air compressor, bag filter, transfer pump, and three carbon vessels installed in series.

The SVE portion of the system was restarted on May 21, 2007. Vapor is extracted using a PD blower and transferred via underground lateral piping to the oxidizer for treatment, prior to discharge to the atmosphere. The SVE portion of the system is operated under South Coast Air Quality Management District (SCAQMD) permit number F89318 (Baker 200, Serial No. 269).

OPERATIONAL HISTORY:

The DPE system was started in January 2000. Initially only vapor extraction was conducted, pending approval to discharge treated groundwater to the onsite sewer system. During the first year of operation, system uptime was approximately 81%. Laboratory reported influent volatile fuel-hydrocarbon (VFH) concentrations ranged from 31,000 to about 800 parts per million by volume (ppmv). Laboratory reported influent methyl *tert*-butyl ether (MTBE) concentrations ranged from 1,500 to 55 ppmv. During the first year of operation, extraction focused on wells W-6, W-7, W-15, W-16, and W-23. On December 5, 2000 following the receipt of the OCSD discharge permit, the extraction of groundwater in conjunction with vapor extraction was initiated.

During the second year of operation of the DPE system (2001), uptime was approximately 72%. During 2001, laboratory reported influent VFH concentrations ranged from about 1,300 to <2.4 ppmv. Laboratory reported influent MTBE concentrations ranged from 280 to <1.4 ppmv. Extraction during 2001 focused primarily on wells W-6, W-25, W-15, W-16, and W-23. Extraction from wells W-2 and W-4 was also conducted from December 2000 to July 2001. Approximately 29,000 gallons of groundwater were extracted, treated, and discharged during 2001.

During the third year of operation of the DPE system (2002), the system operated from January until August 2002, with an operational uptime of approximately 44% during that period. The system was shut off in August 2002, pending major repairs and modifications including pressure switch replacements, transfer pump failure due to high extraction vacuum, and rebuilding of the dilution and process valve manifolds.

During the first half of 2003, repairs to the system were completed and the system was restarted on July 11, 2003 (vapor extraction only). SVE continued into early August 2003 when additional repair needs again required shutdown of the system. Following extensive rebuilding of the well vaults and re-piping/repair of the wellhead/lateral line underground connections during August and September, the DPE system was restarted on October 16, 2003. After groundwater extraction was reinitiated, influent vapor samples were collected on October 22, 2003. Analytical results of these samples indicated a

REMEDIATION SYSTEM SUMMARY – FOURTH QUARTER 2010

ARCO Facility No. 1905
Fountain Valley, California
Page 3

or above the reporting limit of 1.2 ppmv. During the fourth quarter 2005, the DPE system operated for 1,333 hours, and removed approximately 123 pounds of hydrocarbons and approximately 68,000 gallons of groundwater from beneath the site.

During the first quarter 2006, the system operated with an uptime of approximately 43%. The system had been down, since December 6, 2005, due to a torn diaphragm that caused transfer pump failure. The torn diaphragm was replaced on January 19, 2006 and the system was restarted. Scaling has created clogs within the extraction lines of wells W-16 and W-23; therefore, during the reporting period, the DPE system generally focused groundwater and soil vapor extraction from wells W-6, W-15, and W-25. Influent vapor samples collected on January 25 and February 8, 2006 indicated inlet VFH concentrations of 17 and ND<2.4 ppmv, respectively. Influent vapor samples did not indicate inlet MTBE concentrations at or above the reporting limit of 1.2 ppmv. During the first quarter 2006, the DPE system operated for 808 hours, and removed approximately 34 pounds of hydrocarbons and approximately 46,500 gallons of groundwater from beneath the site. The system was shutdown on February 22, 2006 and ¹³C-MTBE Bio-Traps were installed on February 23, 2006 in wells W-15 and W-16.

During the second quarter 2006, the system did not operate while the ¹³C-MTBE and ¹³C-TBA baited Bio-Traps were installed in wells W-15 and W-16. On March 27, 2006, the ¹³C-MTBE baited Bio-Traps were removed from wells W-15 and W-16 after 32 days of incubation and replaced with ¹³C-TBA baited Bio-Traps. The ¹³C-TBA baited Bio-Traps were allowed to incubate for 43 days and were removed on May 9, 2006. On June 9, 2006, another round of ¹³C-MTBE baited Bio-Traps were installed, but only in well W-16 for additional analysis.

During the third quarter 2006, the system did not operate while the ¹³C-MTBE baited Bio-Traps were installed in well W-16. On July 19, 2006, the ¹³C-MTBE baited Bio-Traps were removed from well W-16 after 40 days of incubation and another set of ¹³C-MTBE baited Bio-Traps were installed. On August 22, 2006, the ¹³C-MTBE baited Bio-Traps were removed from well W-16 after an additional 35 days of incubation.

The DPE system was down, from the fourth quarter 2006 to the second quarter 2007, to upgrade and modify the DPE system to allow independent operation of the SVE and GWE systems. Wells W-6, W-7, W-15, W-16, W-23, and W-25 remained connected to the DPE system. The GWE portion of the system was restarted on May 14, 2007 and the SVE portion of the system was restarted on May 21, 2007. During the second quarter 2007, the GWE system recovered approximately 19,499 gallons of groundwater from the subsurface.

During the third quarter 2007, the SVE system did not operate due to intermittent operation of the GWE system caused by a clogged sediment filter, which resulted in repeated high-high alarms. The SVE system was configured to operate only when GWE is running. On August 8, 2007, a second sediment filter was added in parallel to the first sediment filter. Influent groundwater samples collected on July 18, 2007, indicate that a dissolved MTBE concentration of 8,800 ppmv and a TBA concentration of 90,000 ppmv were detected. During this period, the GWE system extracted 140,466 gallons of groundwater from the subsurface and focused extraction on wells W-6, W-7, W-15, W-16, W-23, and W-25.

During the fourth quarter 2007, the SVE system was restarted on September 25, 2007, but subsequently shut off due to effluent VFH concentration greater than the allowable limit set by the SCAQMD permit. A performance evaluation of the SVE was conducted and it was determined that a cracked heat exchanger was the cause of the elevated effluent VOC concentrations. The heat exchanger was removed for repair. Analytical results for the influent vapor sample collected on September 25, 2007, indicate a VFH concentration of 510 ppmv. Analytical results for the influent groundwater sample collected on September 28, 2007, indicate that dissolved concentrations of MTBE (7,200 µg/L) and TBA (79,000 µg/L) were detected. During this period, the SVE system operated a total of 2.6 hours and removed approximately 2 pounds of hydrocarbons from the subsurface, and the GWE system extracted 155,071 gallons of groundwater from the subsurface and focused extraction on wells W-6, W-7, W-15, W-16, W-23, and W-25.

During the second quarter 2008, the GWE system extracted 50,512 gallons of groundwater from the subsurface and focused extraction on wells W-6, W-7, W-15, W-16, W-23, and W-25. The GWE system operated intermittently from January 16, 2008, to February 15, 2008. The GWE system was shut off at this time to replace the carbon. Influent groundwater samples were collected on February 11, 2008, and the analytical results for this sample indicate that dissolved MTBE and TBA concentrations of 100 µg/L and 44,000 µg/L, respectively, were detected. The SVE system did not operate during the quarter because the GWE system was down while the carbon was being replaced.

During the third quarter 2008, the GWE system extracted 5,120 gallons of groundwater from the subsurface and focused extraction on wells W-6, W-7, W-15, W-16, W-23, and W-25. The GWE system operated intermittently from April 3, 2008, to

TABLE 1
Current Groundwater Monitoring/Analytical Data
ARCO Facility No. 1905
18024 Magnolia Street,
Fountain Valley, California

Well ID	Date Sampled	Screen Interval (feet bgs)	TOC	Depth to Water (feet)	Water Elevation (feet msl)	GRO $\mu\text{g/l}$	Benzene $\mu\text{g/l}$	Toluene $\mu\text{g/l}$	Ethylbenzene $\mu\text{g/l}$	Xylenes $\mu\text{g/l}$	MTBE $\mu\text{g/l}$	DIPE $\mu\text{g/l}$	ETBE $\mu\text{g/l}$	TAME $\mu\text{g/l}$	TBA $\mu\text{g/l}$	EOH $\mu\text{g/l}$	
W-1	10/27/2010	-	18.54	9.98	8.56	ND>50	ND>2.0	ND>2.0	ND>2.0	ND<4.0	ND>5.0	ND>5.0	ND>5.0	ND>5.0	ND>5.0	ND<150	
W-2	10/27/2010	-	17.68	11.33	6.35	240	ND>2.0	ND>2.0	ND>2.0	ND<4.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<150	
W-3	10/27/2010	-	19.88	11.51	8.37	140	ND>2.0	ND>2.0	ND>2.0	ND<4.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<150	
W-4	10/27/2010	-	17.56	11.17	6.39	320	ND>2.0	ND>2.0	ND>2.0	ND<4.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<150	
W-6	10/28/2010	-	19.17	10.54	8.63	ND>50	ND>2.0	ND>2.0	ND>2.0	ND<4.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<150	
W-7	10/28/2010	7-22	18.11	10.33	7.78	ND>50	ND>2.0	ND>2.0	ND>2.0	ND<4.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<150	
W-8	10/28/2010	7-22	17.67	9.69	7.98	ND>50	ND>2.0	ND>2.0	ND>2.0	ND<4.0	7.4	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<150	
W-9	10/28/2010	7-22	17.48	9.52	7.96	ND>50	ND>2.0	ND>2.0	ND>2.0	ND<4.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<150	
W-10	10/27/2010	-	18.55	10.25	8.30	ND>50	ND>2.0	ND>2.0	ND>2.0	ND<4.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<150	
W-15	10/28/2010	5-25	18.05	10.27	7.78	ND>50	ND>2.0	ND>2.0	ND>2.0	ND<4.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<150	
W-16	10/28/2010	5-25	18.57	10.70	7.87	ND>50	ND>2.0	ND>2.0	ND>2.0	ND<4.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<150	
W-23	10/28/2010	-	19.03	10.52	8.51	210	24	ND>2.0	ND>2.0	ND<4.0	12	ND>5.0	ND>5.0	ND>5.0	ND>5.0	860	ND<150
W-24	10/27/2010	7-22	19.36	10.84	8.52	ND>50	ND>2.0	ND>2.0	ND>2.0	ND<4.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<150	
W-25	10/28/2010	7-22	17.95	9.93	8.02	55	ND>2.0	ND>2.0	ND>2.0	ND<4.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<150	
W-26	10/28/2010	7-22	18.63	10.62	8.01	ND>50	ND>2.0	ND>2.0	ND>2.0	ND<4.0	36	ND>5.0	ND>5.0	ND>5.0	ND>5.0	ND<150	
W-27	10/28/2010	5-20	19.33	11.15	8.18	ND>50	ND>2.0	ND>2.0	ND>2.0	ND<4.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<150	
W-28	10/28/2010	60-65	18.75	12.51	6.24	ND>50	ND>2.0	ND>2.0	ND>2.0	ND<4.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<150	
W-29	10/28/2010	59-64	18.57	10.46	8.11	ND>50	ND>2.0	ND>2.0	ND>2.0	ND<4.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<150	
W-30	10/28/2010	5-22	18.32	10.37	7.95	ND>50	ND>2.0	ND>2.0	ND>2.0	ND<4.0	25	ND>5.0	ND>5.0	ND>5.0	ND>5.0	ND<150	

Notes:

-- = Not available/Not applicable

bgs = below ground surface

msl = mean sea level

 $\mu\text{g/l}$ = micrograms per liter

TOC = top of well casing

GRO = gasoline range organics

MTBE = methyl tertiary butyl ether

BTEX, MTBE, DIPE, ETBE, TAME, TBA, and EOH analyzed according to EPA Method 8260B

GRO analyzed according to EPA Method 8015 (modified)

Other Information:

1. Wells W-6, -7, -16, -23, and -25 are connected to GWE system

2. The GWE system was operational during this event.

3. Wells W-6, -7, -15, -16, -23, and -25 no purge sampled during this event.

4. All remaining wells purged prior to sampling.